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EXAMINER

NGUYEN, THU HA T

ART UNIT

PAPER NUMBER

2155

6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/497,572

Applicant(s)

AHMED, MOHAMMAD

Examiner

Thu Ha T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13 and 15-26 is/are rejected.
- 7) ☐ Claim(s) 6 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-26 are presented for examination.

Response to Arguments

2. Applicant's arguments filed on December 08, 2003 have been fully considered but they are not persuasive because of the following reasons:

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., fault tree analysis which is a top-down approach employing logical rule or Boolean equations) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. Applicant argues that Examiner has not stated where motivation to modify Walker's timer is found in the Walker disclosure. In respond to Applicant's argument, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case the reason to modify timer for waiting a reply in Walker's disclosure because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response (col. 8 lines 12-

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23). Moreover, Walker discloses the netmon 110 sends a query to managed nodes for a period of time if no response and time-out occurs then managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that Walker implicitly discloses the netmon 110 sends a query to managed nodes for a period of time if no response and time-out occurs then managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23) equivalent to the step of initiate timer for waiting a reply as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that Walker performs the same function in substantially the same way to reach substantially the same result.

5. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to combine the teaching of Walker and Sundaram to include the step of retransmitting all status query messages to all networked elements upon the expiration of timer and re-initiating a timer for awaiting receipt of valid status responses because it would have an efficient network management system that can alarm, detect and recover network failure in a timely fashion.

6. As a result, cited prior arts do disclose a system and method of producing failure alerts in computer network, as broadly claimed by the Applicant. Applicant clearly has still failed to identify specific claim limitations that would define a clearly patentable distinction over prior arts.

7. Therefore, the examiner asserts that cited prior arts teach or suggest the subject matter broadly recited in independent claims 1, 9 and 16. Claims 2-5, 7-8, 10-13, 15, and 17-26 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in the previous office action [see paper no. 3]. Accordingly, claims 1-5, 7-13, and 15-26 are rejected.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5, 9-10 rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Walker et al.**, (hereinafter Walker) U.S. Patent No. **6,061,723**.

10. As to claim 1, **Walker** teaches the invention substantially as claimed, including a method of producing failure alerts in a computer network containing a plurality of networked elements including at least one network router, at least one network management server, and at least one problem management server, said router being interconnected to several subnetworks, each subnetwork interconnecting several networked elements, said method comprising the steps of:

monitoring transmissions via a computer network at least one status query message to each of said networked elements in said computer network (figure1, abstract, col. 1 lines 52-67, col. 2 lines 24-48);

.performing a fault tree analysis to determine the most likely single point of failure based upon a rule structure related to the topology of the computer network, said performance of fault tree analysis being invoked by expiration of the timer if less than all status responses are received (col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67); and

transmitting via a computer network to said problem management server (manager host N 110/network administrator read as problem management server) at least one element failed message for said determined single point of failure such that said problem management server is notified of the most likely point of failure (col. 9 lines 19-col. 10 lines 20).

initiating a timer for awaiting receipt of valid status responses from each networked element in reply to each status query message. **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and time-out

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occurs then managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious that **Walker** discloses the initiating a timer for awaiting of reply status of networked element by the netmon 110 (figure 1); therefore, it would have been obvious to one of ordinary skill in the art to initiate timer for waiting a reply because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response.

11. As to claim 2, **Walker** teaches the invention substantially as claimed, further comprising, the steps of accessing a computer-readable media disposed in said network management server to obtain computer network connectivity and topology data (figure 1, col. 2 lines 24-48); and initiating said rule structure based upon said accessed computer network connectivity and topological data (figure 1, col. 2 lines 24-col. 3 lines 32, col. 6 lines 22-col. 7 lines 67).

12. As to claim 3, **Walker** teaches the invention substantially as claimed, wherein the step of performing fault tree analysis further comprises the step of determining that: a single element on a subnetwork is failed only if no response has been received from that single element and other responses have been received from other networked element on the same subnetwork (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined a mount of time. However, **Walker**

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teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious that **Walker** discloses the step of setting a predetermined a mount of time for awaiting of reply status of networked element by the netmon 110 (figure 1); therefore, it would have been obvious to one of ordinary skill in the art to have a predetermined a mount of time for waiting a reply because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response.

13. As to claim 4, **Walker** teaches the invention substantially as claimed, wherein the step of performing fault tree analysis further comprises the step of determining that: a router interface, network interface card or port is failed only if no responses have been received from any of the networked elements on the subnetwork associated with that router interface, network interface card or port, and only if other responses have been received from other networked elements on other subnetworks associated with other router interfaces, network interface cards, and ports on the same router (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined a mount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col.

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7 lines 8-20, col. 8 lines 12-23). It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have the same motivation as set forth in claim 3, supra.

14. As to claim 5, **Walker** teaches the invention substantially as claimed, wherein the step of performing fault tree analysis further comprises the step of determining that a router is failed only if no responses have been received from any networked elements on any subnetworks associated with any of the router's interfaces, network interface cards, and ports (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined amount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have the same motivation as set forth in claim 3, supra.

15. As to claim 9, **Walker** teaches the invention substantially as claimed, including a computer program product for use with network management server in a computer network, said computer network containing a plurality of networked elements including at least one network router, at least one network management server, and at least one problem management server, said router being interconnected to several

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subnetworks, each subnetwork interconnecting several networked elements, said computer program product comprising:

a computer usable medium having computer readable program code means embodied in said medium for monitoring transmissions via a computer network at least one status query message to each of said networked elements in said computer network (figure1, abstract, col. 1 lines 52-67, col. 2 lines 24-48);

a computer usable medium having computer readable program code means embodied in said medium for performing a fault tree analysis to determine the most likely single point of failure based upon a rule structure related to the topology of the computer network, said performance of fault tree analysis being invoked by expiration of the timer if less than all status responses are received (col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67); and

a computer usable medium having computer readable program code means embodied in said medium for transmitting via a computer network to said problem management server at least one element failed message for said determined single point of failure such that said problem management server is notified of the most likely point of failure (col. 9 lines 19-col. 10 lines 20).

a computer usable medium having computer readable program code means embodied in said medium for initiating a timer for awaiting receipt of valid status responses from each networked element in reply to each status query message.

Walker teaches the netmon 110 sends a query to managed nodes for a period of time if no response and time-out occurs then managed node is down (col. 4 lines 29-37, col. 7

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lines 8-20, col. 8 lines 12-23). It would have been obvious that **Walker** discloses the initiating a timer for awaiting of reply status of networked element by the netmon 110 (figure 1); therefore, it would have been obvious to one of ordinary skill in the art to initiate timer for waiting a reply because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response.

16. As to claim 10, **Walker** teaches the invention substantially as claimed, further comprising: a computer usable medium having computer readable program code means embodied in said medium for accessing a computer-readable media disposed in said network management server to obtain computer network connectivity and topology data (figure 1, col. 2 lines 24-48); and a computer usable medium having computer readable program code means embodied in said medium for initiating said rule structure based upon said accessed computer network connectivity and topological data (figure 1, col. 2 lines 24-col. 3 lines 32, col. 6 lines 22-col. 7 lines 67).

17. Claims 7-8, 11-13, 15-23, and 25 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Walker et al.**, (hereinafter Walker) U.S. Patent No. **6,061,723**, in view of **Sundaram et al.**, (hereinafter Sundaram) U.S. Patent No. **6,564,341**.

18. As to claim 7, **Walker** does not explicitly teach the invention as claimed; however, **Sundaram** teaches the invention substantially as claimed, further comprising the following steps after expiration of the timer and prior to performance of the fault tree analysis immediately retransmitting all status query messages to all networked elements upon the expiration of the timer (col. 15 lines 19-col. 16 lines 32); and re-initiating a timer for awaiting receipt of valid status responses from each networked element in reply to each retransmitted status query message, such that said step of performing fault tree analysis may be performed using a set of recently received responses from the networked elements (col. 17 lines 49-col. 18 lines 28). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Walker and Sundaram** to have the step of retransmitting all status query messages to all networked elements upon the expiration of timer and re-initiating a timer for awaiting receipt of valid status responses because it would have an efficient network management system that can alarm, detect and recover network failure in a timely fashion.

19. As to claim 8, **Walker** does not explicitly teach the invention as claimed; however, **Sundaram** teaches wherein said re-initiated timer is set for an expedited expiration, its expiration value being significantly shorter than the value of its normally initiated value (col. 15 lines 19-col. 16 lines 32, col. 17 lines 49-col. 18 lines 28). **Sundaram** teaches a predetermined time out period (figure 3, col. 7 lines 41-50), it would have been obvious that the system can set the timer shorter or longer than the

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value of its normally initiate value just based on the predetermined time out period.

Therefore, it would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker and Sundaram** to have the step of re-initiated timer is set for an expedited expiration, its expiration value being significantly shorter than the value of its normally initiated value because it would have an efficient network management system that can alarm, detect and recover network failure in a timely fashion.

20. As to claim 11, **Walker** teaches the invention substantially as claimed, wherein the computer readable code for performing fault tree analysis further comprises computer readable program code means embodied in said medium for determining that a single element on a subnetwork is failed only if no response has been received from that single element and other responses have been received from other networked element on the same subnetwork (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined a mount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious that **Walker** discloses the step of setting a predetermined a mount of time for awaiting of reply status of networked element by the netmon 110 (figure 1); therefore, it would have been obvious to one of ordinary skill in the art to have a predetermined a mount of time

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for waiting a reply because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response.

21. As to claim 12, **Walker** teaches the invention substantially as claimed, wherein the computer readable code for performing fault tree analysis further comprises computer readable program code means embodied in said medium for determining that a router interface, network interface card or port is failed only if no responses have been received from any of the networked elements on the subnetwork associated with that router interface, network interface card or port, and only if other responses have been received from other networked elements on other subnetworks associated with other router interfaces, network interface cards, and ports on the same router (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined a mount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have the same motivation as set forth in claim 11, supra.

22. As to claim 13, **Walker** teaches the invention substantially as claimed, wherein the computer readable code for performing fault tree analysis further comprises

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computer readable program code means embodied in said medium for determining that a router is failed only if no responses have been received from any networked elements on any subnetworks associated with any of the router's interfaces, network interface cards, and ports (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined amount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have the same motivation as set forth in claim 11, supra.

23. As to claim 15, **Walker** does not explicitly teach the invention as claimed; however, **Sundaram** teaches a computer usable medium having computer readable program code means embodied in said medium for immediately retransmitting all status query messages to all networked elements upon the expiration of the timer (col. 15 lines 19-col. 16 lines 32); and

a computer usable medium having computer readable program code means embodied in said medium for re-initiating a timer for awaiting receipt of valid status responses from each networked element in reply to each retransmitted status query message, such that said fault tree analysis may be performed using a set of recently received responses from the networked elements (col. 17 lines 49-col. 18 lines 28). It

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would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker and Sundaram** to have the step of retransmitting all status query messages to all networked elements upon the expiration of timer and re-initiating a timer for awaiting receipt of valid status responses because it would have an efficient network management system that can alarm, detect and recover network failure in a timely fashion).

24. As to claim 16, **Walker** teaches the invention substantially as claimed, including a network management server system for producing failure alerts in a computer network, said computer network having at least one network router interconnected to several subnetworks, a plurality of networked elements interconnected via said subnetworks and to said network routers, and at least one problem management server for escalation of failure alerts and notification of failures to maintenance personnel, said network management server system comprising:

a status monitor which monitors status replies from said networked elements made in response to status queries from said network management software suite (figure1);

a failure analyzer invoked by said network management software suite upon the failure to receive one or more status replies from said networked elements, said failure analyzer performing fault tree analysis to determine the most likely point of failure in the computer network (col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67); and

a problem management server notifier which transmits a network element failed message to the problem management server via a computer network, said network element failed message including an indicator corresponding to said most likely point of failure as determined by the failure analyzer (col. 9 lines 19-col. 10 lines 20).

Walker does not explicitly teach the invention as claimed; however, **Sundaram** teaches a network server including a computer hardware platform with a processor and computer-readable medium for storing data and program code, a network communications protocol stack, a network management software suite, and at least one means for communication to networked elements, router and problem management server via said computer network (figures 2-3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker and Sundaram** to have a computer hardware platform with a processor, a program code, a network communications protocol stack and means for communication to the networked elements, router and problem management server because it would have an efficient network management system that can monitor, analyze and detect network fault data.

25. As to claim 17, **Walker** teaches the invention substantially as claimed, wherein said failure analyzer further comprises:

a set of rules for determining the most likely point of failure based upon a predetermined topological interrelationship between the networked elements, the subnetworks, and the routers and their interfaces to the subnetworks and a comparator

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which applies the rules to a set of information containing all the status replies received from networked elements within a predetermined time period, said comparator producing an output corresponding to a most likely point of failure of the network (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67). **Walker** does not explicitly teach a predetermined a mount of time. However, **Walker** teaches the netmon 110 sends a query to managed nodes for a period of time if no response and/or time-out occurs then notifies the manager host N netmon the managed node is down (col. 4 lines 29-37, col. 7 lines 8-20, col. 8 lines 12-23). It would have been obvious that **Walker** discloses the step of setting a predetermined a mount of time for awaiting of reply status of networked element by the netmon 110 (figure 1); therefore, it would have been obvious to one of ordinary skill in the art to have a predetermined a mount of time for waiting a reply because it would have an efficient network management system that can monitor and control networked element by setting reply timer to avoid wasting time and long awaiting for query/ping response

26. As to claim 18, **Walker** teaches the invention substantially as claimed, wherein said set of rules comprise a rule that declares a networked element to be failed only if no status reply from the networked element is found in the set of information being analyzed by the analyzer, and only if at least one status reply from any other networked element on the same subnetwork is found in the set of information being

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analyzed by the analyzer (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67).

27. As to claim 19, **Walker** teaches the invention substantially as claimed, wherein said set of rules comprise a rule that declares a suspect network router interface, network interface card, and port to be failed only if no status reply from any networked element on the subnetwork associated with the suspect network router interface, network interface card, and port is found in the set of information being analyzed by the analyzer, and only if at least one status reply from any other networked element on any other subnetwork associated with any other router interface, network interface card, and port on the same network router is found in the set of information being analyzed by the analyzer (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67).

28. As to claim 20, **Walker** teaches the invention substantially as claimed, wherein said set of rules comprise a rule that declares a suspect network router to be failed only if no status reply from any networked element any subnetwork associated any network interface card or port associated with the suspect network is found in the set of information being analyzed by the analyzer (figures 1, 5-7, col. 2 lines 36-col. 3 lines 31, col. 3 lines 45-col. 4 lines 58, col. 5 lines 35-63, col. 6 lines 22-col. 7 lines 67).

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29. As to claim 21, **Walker** teaches the invention substantially as claimed, further comprising a status refresher which immediately transmits a status query message to each networked element upon the invocation of the failure analyzer in order to update the set of replies received and allow analysis on more recent status of the network to be performed (col. 15 lines 19 col. 16 lines 32, col. 17 lines 49-col. 18 lines 28). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker and Sundaram** to have the step of retransmitting all status query messages to all networked elements upon the expiration of timer and re-initiating a timer for awaiting receipt of valid status responses because it would have an efficient network management system that can alarm, detect and recover network failure in a timely fashion).

30. As to claim 22, **Walker** teaches the invention substantially as claimed, wherein said status monitor, fault analyzer and problem management server notifier are application programs interfaced to a standard network management server software suite (figure 1, 4-5, col. 1 lines 15-col. 2 lines 48).

31. As to claim 23, **Walker** teaches the invention as claimed wherein said application programs are "C" programs compiled and targeted for execution by said computer hardware platform (figure 4, col. 13 lines 4-21).

32. As to claim 25, **Walker** teaches the invention substantially as claimed, wherein said standard network management server software suite is an OpenView suite (col. 1 lines 15-31).

33. Claims 24, and 26 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Walker et al.**, (hereinafter Walker) U.S. Patent No. **6,061,723**, and **Sundaram et al.**, (hereinafter Sundaram) U.S. Patent No. **6,564,341**, further in view of **Groath et al.**, U.S. Patent No. **6,571,285**.

34. As to claim 24, **Walker and Sundaram** do not explicitly teach the invention as claimed; however, **Groath** teaches wherein said standard network management server software suite is a NetView suite (table 39). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker, Sundaram and Groath** to have network management server software suite if a Netview suite because it would have an efficient application program that can be applied for managing, monitoring, analyzing and detecting network fault.

35. As to claim 26, **Walker and Sundaram** do not explicitly teach the invention as claimed; however, **Groath** teaches wherein said computer hardware platform is an RS/6000 computer platform running an AIX operating system, both of which are International Business Machines products (table 39, col. 168-col. 172). It

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would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Walker, Sundaram and Groath** to have an RS/6000 computer platform running an AIX operating system because it would have an efficient operating system that can run on variety of computer platforms.

Allowable Subject Matter

36. Claims 6 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (703) 305-7447. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Hosain T. Alam, can be reached at (703) 308-6662.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7240 for regular communications and 703-746-7238 for After Final communications.

Thu Ha Nguyen

February 13, 2004


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER